VLAN Requirements

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VLAN Requirements

• Supports all 802 LAN technologies
  – 802.3 Ethernet
  – 802.3u 100BASE-T
  – 802.4 Token Bus
  – 802.5 Token Ring
  – 802.6 DQDB
  – 802.9 Isochronous Ethernet
  – 802.11 Wireless LAN
  – 802.12 Demand Priority
VLAN Requirements

- Supports both Spanning Tree and Source Routed network topologies
  - Spanning Tree
    - Single Spanning Tree per VLAN?
    - Single Spanning Tree covering multiple VLANs?
  - Source Routing
    - ?

- VLANs shall be transparent to end systems once “active”
VLAN Requirements

- Communications between VLANs shall be supported at Layer 3 or higher
VLAN Requirements

• Provides the “simple” creation of VLANs as a superset to existing adds, moves and changes
  – Drag and drop
  – Learn existing network topologies
  – Default policy tables
  – Default VLAN definition

• Provides “firewalls” between VLANs
  – Minimize / Eliminate leakage

• Performance “similar” to existing Bridged networks
  – Provide proactive traffic / loading management
VLAN Requirements

- Will adapt to changing network topologies without network management intervention
  - Adding bridges to the network
  - Adding/Deleting links between switches
- Allows station mobility
  - Only in MAC-based VLANs
- Provides a standard method of “sharing” VLAN topology information
  - Switch configuration
  - Inter-Switch Links
- End-to-End flow control will be provided
VLAN Requirements

- Inter-Switch links shall support point-to-point, switched, as well as shared LAN connections
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- Shared LAN IS-IS links shall support multiple end systems
VLAN Requirements

- **Enhanced VLAN services will be “allowed”**
  - Protocol grouping
  - Quality of service
  - Application groups

- **Will interoperate with existing stations**
  - NICs
  - Drivers

- **Will interoperate with existing 802.1D bridges**
  - Spanning Tree
  - Source Routing
  - Source Routing Transparent
VLAN Requirements

- Shall include defined management objects (join, leave, merge, partition)
  - Creation and deletion of VLANs
  - Addition of ports/stations/IS devices to VLANs
  - Changing ports/stations/IS devices on VLANs
  - Moving ports/stations/IS devices from one VLAN to another
  - Remove ports/stations/IS devices from VLANs

- Network management stations will be able to monitor all VLANs in an 802.1D Bridged LAN
  - Physical view
  - Logical view